February 14, 2017

Allied Waste Services
2266 E. 500 South Rd, P.O. Box 113
Brook, IN 47922-

Work Order No.: 17B0291

Re: Arcelormittal IH West

Dear Jay Huitsing:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 2/6/2017 3:00:00PM for the analyses presented in the following report as Work Order 17B0291.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Donna Ruokonen, Managing Director, at donna.ruokonen@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

Karen Ziolkowski
Senior Project Manager

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WORK ORDER SAMPLE SUMMARY

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Project: Arcelormittal IH West
Lab Order: 17B0291

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
17B0291-01	3Sp Desulf Baghouse Dust		02/06/2017 10:00	2/6/2017 3:00:00PM
17B0291-02	Blast Furnace Filter Cake		02/06/2017 10:30	2/6/2017 3:00:00PM

CASE NARRATIVE

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Project: Arcelormittal IH West
Lab Order: 17B0291

The Matrix Spike Duplicate performed on the following sample failed the precision criteria for sulfide. The accuracy criteria were met by the Matrix Spike Duplicate. A Post Digestion Spike was analyzed and the acceptance criteria met, indicating interference at the preparation level. This bias is due to the high indigenous analyte concentration (relative to the spike amount).

Laboratory ID	Sample Name
17B0291-02	3Sp Desulf Baghouse Dust

The Laboratory Control Sample failed the acceptance criteria for TCLP selenium. This is considered insignificant, as the bias was high yet the sample concentration was below the reporting limit. This failure affects the following sample:

Laboratory ID	Sample Name
17B0291-01	3Sp Desulf Baghouse Dust
17B0291-02	3Sp Desulf Baghouse Dust

The Laboratory Control Sample and Laboratory Control Sample Duplicate failed the acceptance criteria for carbon disulfide. This is considered insignificant, as the biases were high yet the sample concentration was below the reporting limit. This failure affects the following sample.

Laboratory ID	Sample Name
17B0291-02	Blast Furnace Filter Cake

The methylene chloride result above the reporting limit for the following sample is likely due to laboratory contamination.

Laboratory ID	Sample Name
17B0291-02	Blast Furnace Filter Cake

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Analytical Results

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Client Project: Arcelormittal IH West
Client Sample ID: 3Sp Desulf Baghouse Dust
Sample Description:
Matrix: Solid

Work Order/ID: 17B0291-01
Sampled: 02/06/2017 10:00
Received: 02/06/2017 15:00

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
TCLP Mercury by CVAA			Method: **1311/7470A** Prep Method: **SW-846 1311/SW-846 7470**				Analyst: **BTM** Prep Date/Time: **02/08/2017 09:46**	
Mercury	dil	A	***ND***	0.0010		mg/L	1	02/08/2017 13:20
TCLP Metals by ICP			Method: **1311/6010C** Prep Method: **SW-846 1311/SW846 3005A**				Analyst: **RM** Prep Date/Time: **02/08/2017 08:38**	
Arsenic	dil	A	***ND***	0.0100		mg/L	1	02/08/2017 20:01
Barium	dil	A	***ND***	0.500		mg/L	1	02/08/2017 20:01
Cadmium	dil	A	***ND***	0.00200		mg/L	1	02/08/2017 20:01
Chromium	dil	A	***0.00580***	0.00500		mg/L	1	02/08/2017 20:01
Lead	dil	A	***ND***	0.00750		mg/L	1	02/08/2017 20:01
Selenium	dil	A	***ND***	0.0300		mg/L	1	02/08/2017 20:01
Silver	dil	A	***ND***	0.0100		mg/L	1	02/08/2017 20:01
Sulfate, Turbidimetric			Method: **SW-846 9038**				Analyst: **AGRIEFF** Prep Date/Time: **02/13/2017 09:00**	
Sulfate	i	A	***1000***	390		mg/Kg	1	02/13/2017 11:07
Total Sulfide			Method: **SW-846 9030B MOD** Prep Method: **Sulfide Distillation**				Analyst: **EB** Prep Date/Time: **02/07/2017 12:25**	
Sulfide	d	A	***44***	2.4		mg/Kg	1	02/07/2017 17:20

Analytical Results

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Client Project: Arcelormittal IH West
Client Sample ID: Blast Furnace Filter Cake
Sample Description:
Matrix: Solid

Work Order/ID: 17B0291-02
Sampled: 02/06/2017 10:30
Received: 02/06/2017 15:00

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Polychlorinated Biphenyls			Method: **SW-846 8082** Prep Method: **SW846 3550B**				Analyst: **als** Prep Date/Time: **02/13/2017 10:43**	
Aroclor 1016	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1221	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1232	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1242	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1248	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1254	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1260	dil	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1262	I	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Aroclor 1268	I	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Total PCB's	I	A	***ND***	33		µg/Kg	1	02/14/2017 0:26
Surr: Tetrachloro-m-xylene		S	80.0	40-130		%REC	1	02/14/2017 0:26
Surr: Decachlorobiphenyl		S	50.0	38-128		%REC	1	02/14/2017 0:26
Semivolatile Organic Compounds			Method: **SW-846 8270C** Prep Method: **SW846 3550**				Analyst: **CLR** Prep Date/Time: **02/09/2017 09:33**	
1,2,4-Trichlorobenzene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
1,2-Dichlorobenzene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
1,2-Diphenyl-hydrazine	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
1,3-Dichlorobenzene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
1,4-Dichlorobenzene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,2´-oxybis(1-chloropropane)	I	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,4,5-Trichlorophenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,4,6-Trichlorophenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,4-Dichlorophenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,4-Dimethylphenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,4-Dinitrophenol	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
2,4-Dinitrotoluene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,6-Dichlorophenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2,6-Dinitrotoluene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2-Chloronaphthalene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2-Chlorophenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2-Methylnaphthalene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2-Methylphenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
2-Nitroaniline	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
2-Nitrophenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
3,3´-Dichlorobenzidine	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
3/4-Methylphenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
3-Nitroaniline	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
4,6-Dinitro-2-methylphenol	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
4-Bromophenyl phenyl ether	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
4-Chloro-3-methylphenol	dil	A	***ND***	660		µg/Kg	1	02/10/2017 17:31
4-Chloroaniline	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31

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Analytical Results

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Client Project: Arcelormittal IH West
Client Sample ID: Blast Furnace Filter Cake
Sample Description:
Matrix: Solid

Work Order/ID: 17B0291-02
Sampled: 02/06/2017 10:30
Received: 02/06/2017 15:00

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8270C**					Analyst: **CLR**
Semivolatile Organic Compounds			Prep Method: **SW846 3550**					Prep Date/Time: **02/09/2017 09:33**
4-Chlorophenyl phenyl ether	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
4-Nitroaniline	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
4-Nitrophenol	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
Acenaphthene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Acenaphthylene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Acetophenone	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Aniline	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Anthracene	dil	A	***400***	330		µg/Kg	1	02/10/2017 17:31
Benzidine	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
Benzo[a]anthracene	dil	A	***710***	330		µg/Kg	1	02/10/2017 17:31
Benzo[a]pyrene	dil	A	***420***	330		µg/Kg	1	02/10/2017 17:31
Benzo[b]fluoranthene	dl	A	***960***	330		µg/Kg	1	02/10/2017 17:31
Benzo[g,h,i]perylene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Benzo[k]fluoranthene	dl	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Benzoic acid	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31
Benzyl alcohol	dil	A	***ND***	660		µg/Kg	1	02/10/2017 17:31
Bis(2-chloroethoxy)methane	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Bis(2-chloroethyl)ether	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Bis(2-ethylhexyl)phthalate	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Butyl benzyl phthalate	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Carbazole	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Chrysene	dil	A	***920***	330		µg/Kg	1	02/10/2017 17:31
Dibenz[a,h]anthracene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Dibenzofuran	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Diethyl phthalate	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Dimethyl phthalate	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Di-n-butyl phthalate	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Di-n-octyl phthalate	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Fluoranthene	dil	A	***1500***	330		µg/Kg	1	02/10/2017 17:31
Fluorene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Hexachlorobenzene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Hexachlorobutadiene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Hexachlorocyclopentadiene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Hexachloroethane	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Indeno[1,2,3cd]pyrene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Isophorone	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Naphthalene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Nitrobenzene	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
N-Nitrosodimethylamine	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
N-Nitrosodi-n-propylamine	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
N-Nitrosodiphenylamine	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Pentachlorophenol	dil	A	***ND***	1600		µg/Kg	1	02/10/2017 17:31

Analytical Results

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Client Project: Arcelormittal IH West
Client Sample ID: Blast Furnace Filter Cake
Sample Description:
Matrix: Solid

Work Order/ID: 17B0291-02
Sampled: 02/06/2017 10:30
Received: 02/06/2017 15:00

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Semivolatile Organic Compounds			Method: **SW-846 8270C** Prep Method: **SW846 3550**				Analyst: **CLR** Prep Date/Time: **02/09/2017 09:33**	
Phenanthrene	dil	A	***1400***	330		µg/Kg	1	02/10/2017 17:31
Phenol	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Pyrene	dil	A	***1800***	330		µg/Kg	1	02/10/2017 17:31
Pyridine	dil	A	***ND***	330		µg/Kg	1	02/10/2017 17:31
Total Cresol	dil	M	***ND***	330		µg/Kg	1	02/10/2017 17:31
Surr: 2,4,6-Tribromophenol		S	77.0	13.9-145		%REC	1	02/10/2017 17:31
Surr: 2-Fluorobiphenyl		S	65.4	28.1-110		%REC	1	02/10/2017 17:31
Surr: 2-Fluorophenol		S	67.9	24.5-110		%REC	1	02/10/2017 17:31
Surr: Nitrobenzene-d5		S	59.7	33.6-110		%REC	1	02/10/2017 17:31
Surr: Phenol-d5		S	79.6	29.6-110		%REC	1	02/10/2017 17:31
Surr: Terphenyl-d14		S	71.1	35.8-121		%REC	1	02/10/2017 17:31
Volatile Organic Compounds			Method: **SW-846 8260B** Prep Method: **SW846 5035**				Analyst: **jln** Prep Date/Time: **02/13/2017 09:00**	
1,1,1,2-Tetrachloroethane	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
1,1,1-Trichloroethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
1,1,2,2-Tetrachloroethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
1,1,2-Trichloroethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
1,1-Dichloroethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
1,1-Dichloroethene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
1,2-Dichloroethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
1,2-Dichloropropane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
2-Butanone	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
2-Hexanone	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
4-Methyl-2-Pentanone	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Acetone	dil	A	***ND***	50		µg/Kg	1	02/13/2017 14:06
Acrolein	dil	A	***ND***	100		µg/Kg	1	02/13/2017 14:06
Acrylonitrile	dil	A	***ND***	100		µg/Kg	1	02/13/2017 14:06
Benzene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Bromodichloromethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Bromoform	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Bromomethane	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Carbon Disulfide	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Carbon tetrachloride	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Chlorobenzene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Chloroethane	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Chloroform	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Chloromethane	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
cis-1,2-Dichloroethene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
cis-1,3-Dichloropropene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Dibromochloromethane	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Ethylbenzene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06

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Analytical Results

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Client Project: Arcelormittal IH West
Client Sample ID: Blast Furnace Filter Cake
Sample Description:
Matrix: Solid

Work Order/ID: 17B0291-02
Sampled: 02/06/2017 10:30
Received: 02/06/2017 15:00

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Volatile Organic Compounds			Method: **SW-846 8260B** Prep Method: **SW846 5035**				Analyst: **jln** Prep Date/Time: **02/13/2017 09:00**	
m,p-Xylene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Methylene chloride	dil	A	***84***	20		µg/Kg	1	02/13/2017 14:06
Methyl-t-Butyl Ether	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
o-Xylene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Styrene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Tetrachloroethene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Toluene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
trans-1,2-Dichloroethene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
trans-1,3-Dichloropropene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Trichloroethene	dil	A	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Trichlorofluoromethane	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Vinyl Acetate	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Vinyl chloride	dil	A	***ND***	10		µg/Kg	1	02/13/2017 14:06
Total 1,2-Dichloroethene	I	M	***ND***	10		µg/Kg	1	02/13/2017 14:06
Total Xylenes	dil	M	***ND***	5.0		µg/Kg	1	02/13/2017 14:06
Surr: 1,2-Dichloroethane-d4		S	114	51.7-162		%REC	1	02/13/2017 14:06
Surr: 4-Bromofluorobenzene		S	79.9	57.4-135		%REC	1	02/13/2017 14:06
Surr: Dibromofluoromethane		S	112	63.5-139		%REC	1	02/13/2017 14:06
Surr: Toluene-d8		S	127	66.6-143		%REC	1	02/13/2017 14:06
TCLP Mercury by CVAA			Method: **1311/7470A** Prep Method: **SW-846 1311/SW-846 7470**				Analyst: **BTM** Prep Date/Time: **02/08/2017 09:46**	
Mercury	dil	A	***ND***	0.0010		mg/L	1	02/08/2017 13:23
TCLP Metals by ICP			Method: **1311/6010C** Prep Method: **SW-846 1311/SW846 3005A**				Analyst: **RM** Prep Date/Time: **02/08/2017 08:38**	
Arsenic	dil	A	***ND***	0.0100		mg/L	1	02/08/2017 20:06
Barium	dil	A	***0.931***	0.500		mg/L	1	02/08/2017 20:06
Cadmium	dil	A	***ND***	0.00200		mg/L	1	02/08/2017 20:06
Chromium	dil	A	***0.0392***	0.00500		mg/L	1	02/08/2017 20:06
Lead	dil	A	***0.0807***	0.00750		mg/L	1	02/08/2017 20:06
Selenium	dil	A	***ND***	0.0300		mg/L	1	02/08/2017 20:06
Silver	dil	A	***ND***	0.0100		mg/L	1	02/08/2017 20:06
Ignitability (Open Cup)			Method: **ASTM D92-90 MOD**				Analyst: **EB** Prep Date/Time: **02/10/2017 13:00**	
Ignitability		A	***> 170***	30		°F	1	02/10/2017 13:00
Paint Filter			Method: **SW-846 9095B**				Analyst: **EB** Prep Date/Time: **02/13/2017 13:13**	
Paint Filter	di	A	***Pass***	0.0		Pass/Fail	1	02/13/2017 13:13
pH			Method: **SW-846 9045D**				Analyst: **EB** Prep Date/Time: **02/09/2017 11:12**	
pH	dil	A	***8.90***	2.00		pH at 25°C	1	02/09/2017 11:12

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Analytical Results

Date: *Tuesday, February 14, 2017*

Client: Allied Waste Services
Client Project: Arcelormittal IH West
Client Sample ID: Blast Furnace Filter Cake
Sample Description:
Matrix: Solid

Work Order/ID: 17B0291-02
Sampled: 02/06/2017 10:30
Received: 02/06/2017 15:00

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Sulfate, Turbidimetric			Method: **SW-846 9038**					Analyst: **AGRIEFF** Prep Date/Time: **02/13/2017 09:00**
Sulfate	**i**	A	***1800***	400		mg/Kg	1	02/13/2017 11:09
Total Sulfide			Method: **SW-846 9030B MOD** Prep Method: **Sulfide Distillation**					Analyst: **EB** Prep Date/Time: **02/07/2017 12:25**
Sulfide	**d**	A	***910***	250		mg/Kg	100	02/07/2017 17:20

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

B = Detected in the associated method Blank at a concentration above the routine RL
b- = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL
b* = Detected in the associated method Blank at a concentration greater than half the RL
CFU = Colony forming units
D = Dilution performed on sample
DF = Dilution Factor
g = Gram
E = Value above quantitation range
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference
J = Analyte concentration detected between RL and MDL (Metals / Organics)
LOD = Limit of Detection
LOQ = Limit of Quantitation
m3 = Meters cubed
MDL = Method Detection Limit
mg/Kg = Milligrams per Kilogram (ppm)
mg/L = Milligrams per Liter (ppm)
NA = Not Analyzed
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
NR = Not Recovered
R = RPD outside accepted recovery limits
RL = Reporting Limit
S = Spike recovery outside recovery limits
Surr = Surrogate
U = Undetected
> = Greater than
< = Less than
% = Percent
* = Result exceeds project specific limits

ANALYTE TYPES: (AT)

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte
S = Surrogate
T = Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CRL = Client Required Reporting Limit
PDS = Post Digestion Spike
QCS = Quality Control Standard
ICSA = Interference Check Standard "A"
ICSAB = Interference Check Standard "AB"
BSD = Method Blank Spike Duplicate
MSD = Matrix Spike Duplicate
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
OPR = Ongoing Precision and Recovery Standard
SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

[d] Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
[i] Kansas Dept Health & Env. NELAP (#E-10397)
[l] North Carolina DENR NPDES effluent, surface water (#597)

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COOLER INSPECTION

Date: Tuesday, February 14, 2017

Client Name: Allied Waste Services

Date/Time Received: 02/06/2017 15:00

Work Order Number: 17B0291

Received by: Nicole Rainwater

Checklist completed by: 2/6/2017 3:03:00PM | Nicole Rainwater

Reviewed by: 2/7/2017 | CAG

Carrier Name: Client Delivered

Cooler ID: Default Cooler

Container/Temp Blank Temperature: 19.8° C

After-Hour Arrival?	Yes	☐	No	☑		
Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	Not Present	☑
Custody seals intact on sample containers?	Yes	☐	No	☐	Not Present	☑
COC present?	Yes	☑	No	☐		
COC included sufficient client identification?	Yes	☑	No	☐		
COC included sufficient sample collector information?	Yes	☑	No	☐		
COC included a sample description?	Yes	☑	No	☐		
COC agrees with sample labels?	Yes	☑	No	☐		
COC identified the appropriate matrix?	Yes	☑	No	☐		
COC included date of collection?	Yes	☑	No	☐		
COC included time of collection?	Yes	☑	No	☐		
COC identified the appropriate number of containers?	Yes	☑	No	☐		
Samples in proper container/bottle?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		
All samples received within holding time?	Yes	☑	No	☐		
If the samples are preserved, are the preservatives identified?	Yes	☑	No	☐		

If No, adjusted by? _____

COC included the requested analyses?	Yes	☑	No	☐		
COC signed when relinquished and received?	Yes	☑	No	☐		
Samples received on ice?	Yes	☐	No	☑		
Samples properly preserved?	Yes	☑	No	☐		
Voa vials for aqueous samples have zero headspace?	Yes	☐	No	☐	No VOA vials submitted	☑

Cooler Comments:

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

Sample ID	Client Sample ID	Comments
17B0291-01	3Sp Desulf Baghouse Dust	
17B0291-02	Blast Furnace Filter Cake	

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Samples Submitted to:

[ ] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664

[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Record

Number **138877**

Instructions on back

Client Name: Republic Services	Project: Arcelor Mittal IH West	**Turnaround Time**	**Report Type**
Address: 2266 E 500 South	Location	[X] Routine (5 to 7 business days)	[ ] Results Only [ ] Level II
City, State, Zip: Brook, IN 47922	PO #: 6305393	[ ] RUSH* (notify lab)	[ ] Level III [ ] Level III CLP-like
Contact: Jay Hunsing	Compliance Monitoring? [ ] Yes [X] No	_____ (needed by)	[ ] Level IV [ ] Level IV CLP-like
Telephone #: 219-712-1380	(1)Agency/Program		[ ] EDD

Sampled by (PRINT): Jay Hunsing Sampler Signature: Jay Hunsing Sampler Phone #: 219-712-1380

Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #) [X] e-mail (address): Kevin.Lutz@arcelormittal.com

* **Matrix Types:** Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** **Preservative Types:** (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types ** ↓	TCLP Metals	Total Sulfides	Total Sulfates	Paint Filter	PH	Total PCB	Total VOCs & Semi VOCs	Ignitability	For Lab Use Only
3SP DeSulf Baghouse Dust	S	X			2-6-17	10:00	1		X	X	X						17B0291-01
Blast Furnace Filter Cake	S	X			2-6-17	10:30	1		X	X	X	X	X	X	X	X	17B0291-02

Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

To be completed by Microbac	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Temperature Upon Receipt (°C): 21.7-1.9=19.8	Jay Hunsing	2-6-17 1500		
Samples Received on Ice? Yes (No) N/A	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Custody Seals Intact? Yes No (N/A)	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
			Nicole Kinnaird	2-6-17 1500

17B0291
Republic Services - Brook, IN
Arcelormittal IH West
02/06/2017
Carey Gadzala

rev.6/18/15